Agile Delivery of Electrical Power Technology (ADEPT)

ARPA-E seeks to invest in materials for key advances in soft magnetics, high-voltage switches, and reliable, high-density charge storage. Combined with advanced circuit architectures and scalable manufacturing, these investments could potentially leapfrog existing power converter performance and reduce costs.

Specifically, ADEPT will consider three levels of performance and integration:

1. Fully-integrated, chip-scale power converters for applications, including: compact, efficient drivers for solid-state lighting, distributed micro-inverters for photovoltaics, and single-chip power supplies for computers;

2. Kilowatt-scale package-integrated power converters by enabling applications such as low-cost, efficient inverters for grid-tied photovoltaics and variable speed motors; and

3. Lightweight, solid-state, medium-voltage energy conversion for high-power applications such as solid-state electrical substations and wind turbine generators.

Deploying advanced power electronics could reduce electricity consumption up to 30 percent, or 12 percent of total U.S. energy use. Innovations in power electronics could significantly reduce costs, which would promote U.S. businesses through technological leadership.

Timeline

- Secretary Steven Chu announced the funding opportunity at the Energy Innovation Summit on March 2, 2010.
- Secretary Steven Chu announced the award selections on July 12, 2010.

Project stats

- 14 projects, totaling $36.3 Million
- Complete descriptions can be found at: http://arpa-e.energy.gov/ProgramsProjects/ADEPT.aspx

Program Director

- Dr. Rajeev Ram